



65	70	75	80	
ctc tcc tac ttc gcc tgg cct ctc tac tgg gcc tgc caa ggg tgc gtc Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val	85	90	95	288
cta acc ggc gtc tgg gtc ata gcc cac gaa tgc ggc cac cac gcc ttc Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe	100	105	110	336
agc gac tac cag tgg ctt gac gac acc gtc ggt ctc atc ttc cac tcc Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser	115	120	125	384
ttc ctc ctc gtc cct tac ttc tcc tgg aag tac agt cat cgc agc cac Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Ser His	130	135	140	432
cat tcc aac act ggc tcc ctc gag aga gac gaa gtg ttt gtc ccc aag His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys	145	150	155	480
aag aag tca gac atc aag tgg tac ggc aag tac ctc aac aac cct ttg Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu	165	170	175	528
gga cgc acc gtg atg tta acg gtt cag ttc act ctc ggc tgg ccg ttg Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu	180	185	190	576
tac tta gcc ttc aac gtc tcg gga aga cct tac gac ggc ggc ttc cgt Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Phe Arg	195	200	205	624
tgc cat ttc cac ccc aac gct ccc atc tac aac gac cgc gag cgt ctc Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu	210	215	220	672
cag ata tac atc tcc gac gct ggc atc ctc gcc gtc tac ggt ctc Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu	225	230	235	720
ttc cgt tac gcc ggc cag gga gtg gcc tcg atg gtc tgc ttc tac Phe Arg Tyr Ala Ala Gly Gln Gly Val Ala Ser Met Val Cys Phe Tyr	245	250	255	768
gga gtc ccg ctt ctg att gtc aat ggt ttc ctc gtg ttg atc act tac Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr	260	265	270	816
ttg cag cac acg cat cct tcc ctg cct cac tac gat tcg tcc gag tgg Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp	275	280	285	864

gat tgg ttc agg gga gct ttg gct acc gtt gac aga gac tac gga atc Asp Trp Phe Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile 290 295 300	912
ttg aac aag gtc ttc cac aat att acc gac acg cac gtg gcc cat cat Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His 305 310 315 320	960
ccg ttc tcc acg atg ccg cat tat cac gcg atg gaa gct acc aag gcg Pro Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala 325 330 335	1008
ata aag ccg ata ctg gga gag tat tat cag ttc gat ggg acg ccg gtg Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val 340 345 350	1056
gtt aag gcg atg tgg agg gag gcg aag gag tgt atc tat gtg gaa ccg Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro 355 360 365	1104
gac agg caa ggt gag aag aaa ggt gtg ttc tgg tac aac aat aag tta Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu 370 375 380	1152
tga	1155
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Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser 35 40 45	
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser 50 55 60	
Cys Phe Tyr Tyr Xaa Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro 65 70 75 80	
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val 85 90 95	
Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe 100 105 110	
Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser 115 120 125	
Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Ser His 130 135 140	

His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys  
 145 150 155 160  
 Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu  
 165 170 175  
 Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu  
 180 185 190  
 Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Arg  
 195 200 205  
 Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu  
 210 215 220  
 Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu  
 225 230 235 240  
 Phe Arg Tyr Ala Ala Gly Gln Gly Val Ala Ser Met Val Cys Phe Tyr  
 245 250 255  
 Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr  
 260 265 270  
 Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp  
 275 280 285  
 Asp Trp Phe Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile  
 290 295 300  
 Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His  
 305 310 315 320  
 Pro Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala  
 325 330 335  
 Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val  
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 Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro  
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 Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu  
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 Met Gly Ala Gly Gly Arg Met Gln Val Ser Pro Pro Ser Lys Lys Ser  
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gaa acc gac acc atc aag cgc gta ccc tgc gag aca ccg ccc ttc act  
 Glu Thr Asp Thr Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr  
 20 25 30

48

96

gtc gga gaa ctc aag aaa gca atc cca ccg cac tgt ttc aaa cgc tcg Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser	35	40	45	144
atc cct cgc tct ttc tcc tac ctc atc tgg gac atc atc ata gcc tcc Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ala Ser	50	55	60	192
tgc ttc tac tac ntc gcc acc act tac ttc cct ctc ctc cct cac cct Cys Phe Tyr Tyr Xaa Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro	65	70	75	240
ctc tcc tac ttc gcc tgg cct ctc tac tgg gcc tgc caa ggg tgc gtc Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val	85	90	95	288
cta acc ggc gtc tgg gtc ata gcc cac aag tgc ggc cac cac gcc ttc Leu Thr Gly Val Trp Val Ile Ala His Lys Cys Gly His His Ala Phe	100	105	110	336
agc gac tac cag tgg ctt gac gac acc gtc ggt ctc atc ttc cac tcc Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser	115	120	125	384
ttc ctc ctc gtc cct tac ttc tcc tgg aag tac agt cat cgc agc cac Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Ser His	130	135	140	432
cat tcc aac act ggc tcc ctc gag aga gac gaa gtg ttt gtc ccc aag His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys	145	150	155	480
aag aag tca gac atc aag tgg tac ggc aag tac ctc aac aac cct ttg Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu	165	170	175	528
gga cgc acc gtg atg tta acg gtt cag ttc act ctc ggc tgg ccg ttg Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu	180	185	190	576
tac tta gcc ttc aac gtc tcg gga aga cct tac gac ggc ggc ttc cgt Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Arg	195	200	205	624
tgc cat ttc cac ccc aac gct ccc atc tac aac gac cgc gag cgt ctc Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu	210	215	220	672
cag ata tac atc tcc gac gct ggc atc ctc gcc gtc tac ggt ctc Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu	225	230	235	720
			240	

ttc cgt tac gcc gcc ggc cag gga gtg gcc tcg atg gtc tgc ttc tac Phe Arg Tyr Ala Ala Gly Gln Gly Val Ala Ser Met Val Cys Phe Tyr	245                    250                    255	768
gga gtc ccg ctt ctg att gtc aat ggt ttc ctc gtg ttg atc act tac Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr	260                    265                    270	816
ttg cag cac acg cat cct tcc ctg cct cac tac gat tcg tcc gag tgg Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp	275                    280                    285	864
gat tgg ttc agg gga gct ttg gct acc gtt gac aga gac tac gga atc Asp Trp Phe Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile	290                    295                    300	912
ttg aac aag gtc ttc cac aat att acc gac acg cac gtg gcc cat cat Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His	305                    310                    315                    320	960
ccg ttc tcc acg atg ccg cat tat cac gcg atg gaa gct acc aag gcg Pro Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala	325                    330                    335	1008
ata aag ccg ata ctg gga gag tat tat cag ttc gat ggg acg ccg gtg Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val	340                    345                    350	1056
gtt aag gcg atg tgg agg gag gcg aag gag tgt atc tat gtg gaa ccg Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro	355                    360                    365	1104
gac agg caa ggt gag aag aaa ggt gtg ttc tgg tac aac aat aag tta Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu	370                    375                    380	1152
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Glu Thr Asp Thr Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr		
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Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser		
35                    40                    45		

Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser  
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 Cys Phe Tyr Tyr Xaa Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro  
       65                  70                  75                  80  
 Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val  
       85                  90                  95  
 Leu Thr Gly Val Trp Val Ile Ala His Lys Cys Gly His His Ala Phe  
       100                105                110  
 Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser  
       115                120                125  
 Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Ser His  
       130                135                140  
 His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys  
       145                150                155                160  
 Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu  
       165                170                175  
 Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu  
       180                185                190  
 Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Arg  
       195                200                205  
 Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu  
       210                215                220  
 Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu  
       225                230                235                240  
 Phe Arg Tyr Ala Ala Gly Gln Gly Val Ala Ser Met Val Cys Phe Tyr  
       245                250                255  
 Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr  
       260                265                270  
 Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp  
       275                280                285  
 Asp Trp Phe Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile  
       290                295                300  
 Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His  
       305                310                315                320  
 Pro Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala  
       325                330                335  
 Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val  
       340                345                350  
 Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro  
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 <223> Wild type Fad2

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gaa acc gac aac atc aag cgc gta ccc tgc gag aca ccg ccc ttc act				96
Glu Thr Asp Asn Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr				
20	25	30		
gtc gga gaa ctc aag aaa gca atc cca ccg cac tgt ttc aaa cgc tcg				144
Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser				
35	40	45		
atc cct cgc tct ttc tcc tac ctc atc tgg gac atc atc ata gcc tcc				192
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser				
50	55	60		
tgc ttc tac tac gtc gcc acc act tac ttc cct ctc cct cac cct				240
Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro				
65	70	75	80	
ctc tcc tac ttc gcc tgg cct ctc tac tgg gcc tgc cag ggc tgc gtc				288
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val				
85	90	95		
cta acc ggc gtc tgg gtc ata gcc cac gag tgc ggc cac cac gcc ttc				336
Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe				
100	105	110		
agc gac tac cag tgg ctg gac gac acc gtc ggc ctc atc ttc cac tcc				384
Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser				
115	120	125		
ttc ctc ctc gtc cct tac ttc tcc tgg aag tac agt cat cga cgc cac				432
Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His				
130	135	140		
cat tcc aac act ggc tcc ctc gag aga gac gaa gtg ttt gtc ccc aag				480
His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys				
145	150	155	160	
aag aag tca gac atc aag tgg tac ggc aag tac ctc aac aac cct ttg				528
Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu				
165	170	175		
gga cgc acc gtg atg tta acg gtt cag ttc act ctc ggc tgg cct ttg				576
Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu				
180	185	190		
tac tta gcc ttc aac gtc tcg ggg aga cct tac gac ggc ggc ttc gct				624
Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Ala				
195	200	205		

tgc cat ttc cac ccc aac gct ccc atc tac aac gac cgc gag cgt ctc Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu 210 215 220	672
cag ata tac atc tcc gac gct ggc atc ctc gcc gtc tgc tac ggt ctc Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu 225 230 235 240	720
tac cgc tac gct gtc caa gga gtt gcc tcg atg gtc tgc ttc tac Tyr Arg Tyr Ala Ala Val Gln Gly Val Ala Ser Met Val Cys Phe Tyr 245 250 255	768
gga gtt ccg ctt ctg att gtc aat ggg ttc tta gtt ttg atc act tac Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr 260 265 270	816
ttg cag cac acg cat cct tcc ctg cct cac tat gac tcg tct gag tgg Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp 275 280 285	864
gat tgg ttg agg gga gct ttg gcc acc gtt gac aga gac tac gga atc Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile 290 295 300	912
ttg aac aag gtc ttc cac aat atc acg gac acg cac gtg gcg cat cac Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His 305 310 315 320	960
ctg ttc tcg acc atg ccg cat tat cat gcg atg gaa gct acg aag gcg Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala 325 330 335	1008
ata aag ccg ata ctg gga gag tat tat cag ttg cat ggg acg ccg gtg Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Leu His Gly Thr Pro Val 340 345 350	1056
gtt aag gcg atg tgg agg gag gcg aag gag tgt atc tat gtg gaa ccg Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro 355 360 365	1104
gac agg caa ggt gag aag aaa ggt gtg ttc tgg tac aac aat aag tta Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu 370 375 380	1152
tga	1155

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<212> PRT  
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Pro	Cys	Glu	Thr
Thr	Pro	Pro	Phe
20	25	30	
Val	Gly	Glu	Leu
Lys	Lys	Ala	Ile
Pro	Pro	His	Cys
Tyr	Phe	Lys	Arg
35	40	45	
Ile	Pro	Arg	Ser
Phe	Ser	Tyr	Leu
Ile	Trp	Asp	Ile
Ile	Ile	Ile	Ala
50	55	60	
Cys	Phe	Tyr	Tyr
Val	Ala	Thr	Thr
Tyr	Phe	Pro	Leu
Leu	Leu	Leu	Pro
65	70	75	80
Leu	Ser	Tyr	Phe
Ala	Trp	Pro	Leu
Tyr	Trp	Leu	Tyr
85	90	95	
Leu	Thr	Gly	Val
Trp	Val	Ile	Ala
His	Glu	Cys	Gly
His	His	His	Ala
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Trp	Leu	Asp	Asp
Asp	Thr	Val	Gly
Leu	Ile	Phe	Leu
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Pro	Tyr	Phe	Ser
Trp	Lys	Tyr	Ser
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His	Ser	Asn	Thr
Gly	Ser	Leu	Glu
Arg	Asp	Asp	Glu
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Lys	Lys	Ser	Asp
Ile	Lys	Trp	Tyr
Gly	Lys	Tyr	Leu
165	170	175	
Gly	Arg	Thr	Val
Met	Leu	Thr	Val
Gln	Phe	Thr	Leu
180	185	190	
Tyr	Leu	Ala	Phe
Asn	Val	Ser	Gly
Arg		Pro	Tyr
195	200	205	
Cys	His	Phe	His
Pro	Asn	Ala	Pro
Ile	Tyr	Asn	Asp
210	215	220	
Gln	Ile	Tyr	Ile
Ser	Asp	Ala	Gly
Ile	Leu	Ala	Val
225	230	235	240
Tyr	Arg	Tyr	Ala
Ala	Ala	Val	Gln
Gly	Val	Ala	Gly
245	250	255	
Gly	Val	Pro	Leu
Leu	Leu	Ile	Val
Asn	Gly	Asn	Phe
260	265	270	
Leu	Gln	His	Thr
His	Pro	Ser	Leu
Pro	His	Tyr	Asp
275	280	285	
Asp	Trp	Leu	Arg
Gly	Ala	Leu	Ala
290	295	300	
Leu	Asn	Lys	Val
Phe	His	Asn	Ile
305	310	315	320
Leu	Phe	Ser	Thr
Thr	Met	Pro	His
His	Tyr	His	Ala
325	330	335	
Ile	Lys	Pro	Ile
Ile	Gly	Glu	Tyr
340	345	350	
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Asp	Arg	Gln	Gly
Gly	Glu	Lys	Lys
370	375	380	

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&lt;222&gt; (1)...(1152)

&lt;223&gt; T to A transversion mutation at nucleotide 515

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Glu Thr Asp Asn Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr  
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Val Gly Glu Leu Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser  
35 40 45atc cct cgc tct ttc tcc tac ctc atc tgg gac atc atc ata gcc tcc 192  
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser  
50 55 60tgc ttc tac tac gtc gcc acc act tac ttc cct ctc ctc cct cac cct 240  
Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro  
65 70 75 80ctc tcc tac ttc gcc tgg cct ctc tac tgg gcc tgc cag ggc tgc gtc 288  
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val  
85 90 95cta acc ggc gtc tgg gtc ata gcc cac gag tgc ggc cac cac gcc ttc 336  
Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe  
100 105 110agc gac tac cag tgg ctg gac gac acc gtc ggc ctc atc ttc cac tcc 384  
Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser  
115 120 125ttc ctc ctc gtc cct tac ttc tcc tgg aag tac agt cat cga cgc cac 432  
Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His  
130 135 140cat tcc aac act ggc tcc ctc gag aga gac gaa gtg ttt gtc ccc aag 480  
His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys  
145 150 155 160aag aag tca gac atc aag tgg tac ggc aag tac cac aac aac cct ttg 528  
Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr His Asn Asn Pro Leu  
165 170 175gga cgc acc gtg atg tta acg gtt cag ttc act ctc ggc tgg cct ttg 576  
Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu  
180 185 190

tac tta gcc ttc aac gtc tcg ggg aga cct tac gac ggc ggc ttc gct Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Ala 195 200 205	624
tgc cat ttc cac ccc aac gct ccc atc tac aac gac cgc gag cgt ctc Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu 210 215 220	672
cag ata tac atc tcc gac gct ggc atc ctc gcc gtc tac ggt ctc Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu 225 230 235 240	720
tac cgc tac gct gtc caa gga gtt gcc tcg atg gtc tgc ttc tac Tyr Arg Tyr Ala Ala Val Gln Gly Val Ala Ser Met Val Cys Phe Tyr 245 250 255	768
gga gtt ccg ctt ctg att gtc aat ggg ttc tta gtt ttg atc act tac Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr 260 265 270	816
ttg cag cac acg cat cct tcc ctg cct cac tat gac tcg tct gag tgg Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp 275 280 285	864
gat tgg ttg agg gga gct ttg gcc acc gtt gac aga gac tac gga atc Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile 290 295 300	912
ttg aac aag gtc ttc cac aat atc acg gac acg cac gtg gcg cat cac Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His 305 310 315 320	960
ctg ttc tcg acc atg ccg cat tat cat gcg atg gaa gct acg aag gcg Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala 325 330 335	1008
ata aag ccg ata ctg gga gag tat tat cag ttg cat ggg acg ccg gtg Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Leu His Gly Thr Pro Val 340 345 350	1056
gtt aag gcg atg tgg agg gag gcg aag gag tgt atc tat gtg gaa ccg Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro 355 360 365	1104
gac agg caa ggt gag aag aaa ggt gtg ttc tgg tac aac aat aag tta Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu 370 375 380	1152
tga	1155

<210> 8  
<211> 384  
<212> PRT

&lt;213&gt; Brassica napus

<400> 8

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Glu	Thr	Asp	Asn	Ile	Lys	Arg	Val	Pro	Cys	Glu	Thr	Pro	Pro	Phe	Thr
				20				25					30		
Val	Gly	Glu	Leu	Lys	Lys	Ala	Ile	Pro	Pro	His	Cys	Phe	Lys	Arg	Ser
				35				40				45			
Ile	Pro	Arg	Ser	Phe	Ser	Tyr	Leu	Ile	Trp	Asp	Ile	Ile	Ile	Ala	Ser
						50		55			60				
Cys	Phe	Tyr	Tyr	Val	Ala	Thr	Thr	Tyr	Phe	Pro	Leu	Leu	Pro	His	Pro
				65			70			75			80		
Leu	Ser	Tyr	Phe	Ala	Trp	Pro	Leu	Tyr	Trp	Ala	Cys	Gln	Gly	Cys	Val
					85				90			95			
Leu	Thr	Gly	Val	Trp	Val	Ile	Ala	His	Glu	Cys	Gly	His	His	Ala	Phe
					100			105				110			
Ser	Asp	Tyr	Gln	Trp	Leu	Asp	Asp	Thr	Val	Gly	Leu	Ile	Phe	His	Ser
					115			120			125				
Phe	Leu	Leu	Val	Pro	Tyr	Phe	Ser	Trp	Lys	Tyr	Ser	His	Arg	Arg	His
				130			135			140					
His	Ser	Asn	Thr	Gly	Ser	Leu	Glu	Arg	Asp	Glu	Val	Phe	Val	Pro	Lys
				145			150			155			160		
Lys	Lys	Ser	Asp	Ile	Lys	Trp	Tyr	Gly	Lys	Tyr	His	Asn	Asn	Pro	Leu
					165			170			175				
Gly	Arg	Thr	Val	Met	Leu	Thr	Val	Gln	Phe	Thr	Leu	Gly	Trp	Pro	Leu
				180			185				190				
Tyr	Leu	Ala	Phe	Asn	Val	Ser	Gly	Arg	Pro	Tyr	Asp	Gly	Gly	Phe	Ala
				195			200			205					
Cys	His	Phe	His	Pro	Asn	Ala	Pro	Ile	Tyr	Asn	Asp	Arg	Glu	Arg	Leu
				210			215			220					
Gln	Ile	Tyr	Ile	Ser	Asp	Ala	Gly	Ile	Leu	Ala	Val	Cys	Tyr	Gly	Leu
				225			230			235			240		
Tyr	Arg	Tyr	Ala	Ala	Val	Gln	Gly	Val	Ala	Ser	Met	Val	Cys	Phe	Tyr
					245			250			255				
Gly	Val	Pro	Leu	Leu	Ile	Val	Asn	Gly	Phe	Leu	Val	Leu	Ile	Thr	Tyr
					260			265			270				
Leu	Gln	His	Thr	His	Pro	Ser	Leu	Pro	His	Tyr	Asp	Ser	Ser	Glu	Trp
					275			280			285				
Asp	Trp	Leu	Arg	Gly	Ala	Leu	Ala	Thr	Val	Asp	Arg	Asp	Tyr	Gly	Ile
					290			295			300				
Leu	Asn	Lys	Val	Phe	His	Asn	Ile	Thr	Asp	Thr	His	Val	Ala	His	His
				305			310			315			320		
Leu	Phe	Ser	Thr	Met	Pro	His	Tyr	His	Ala	Met	Glu	Ala	Thr	Lys	Ala
					325			330			335				
Ile	Lys	Pro	Ile	Leu	Gly	Glu	Tyr	Tyr	Gln	Leu	His	Gly	Thr	Pro	Val
				340			345			350					
Val	Lys	Ala	Met	Trp	Arg	Glu	Ala	Lys	Glu	Cys	Ile	Tyr	Val	Glu	Pro
				355			360			365					
Asp	Arg	Gln	Gly	Glu	Lys	Lys	Gly	Val	Phe	Trp	Tyr	Asn	Asn	Lys	Leu
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 <212> DNA  
 <213> Brassica napus

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 <221> CDS  
 <222> (1)...(1152)

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 Met Gly Ala Gly Gly Arg Met Gln Val Ser Pro Pro Ser Lys Lys Ser
 1 5 10 15

 gaa acc gac aac atc aag cgc gta ccc tgc gag aca ccg ccc ttc act 96
 Glu Thr Asp Asn Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr
 20 25 30

 gtc gga gaa ctc aag aaa gca atc cca ccg cac tgt ttc aaa cgc tcg 144
 Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser
 35 40 45

 atc cct cgc tct ttc tcc tac ctc atc tgg gac atc atc ata gcc tcc 192
 Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser
 50 55 60

 tgc ttc tac tac gtc gcc acc act tac ttc cct ctc ctc cct cac cct 240
 Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro
 65 70 75 80

 ctc tcc tac ttc gcc tgg cct ctc tac tgg gcc tgc cag ggc tgc gtc 288
 Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val
 85 90 95

 cta acc ggc gtc tgg gtc ata gcc cac gag tgc ggc cac cac gcc ttc 336
 Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe
 100 105 110

 agc gac tac cag tgg ctg gac gac acc gtc ggc ctc atc ttc cac tcc 384
 Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser
 115 120 125

 ttc ctc ctc gtc cct tac ttc tcc tgg aag tac agt cat cga cgc cac 432
 Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His
 130 135 140

 cat tcc aac act ggc tcc ctc gag aga gac gaa gtg ttt gtc ccc aag 480
 His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys
 145 150 155 160

 aag aag tca gac atc aag tgg tac ggc aag tac ctc aac aac cct ttg 528
 Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu
 165 170 175

gga cgc acc gtg atg tta acg gtt cag ttc act ctc ggc tgg cct ttg Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu 180                   185                   190	576
tac tta gcc ttc aac gtc tcg ggg aga cct tac gac ggc ggc ttc gct Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Ala 195                   200                   205	624
tgc cat ttc cac ccc aac gct ccc atc tac aac gac cgt gag cgt ctc Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu 210                   215                   220	672
cag ata tac atc tcc gac gct ggc atc ctc gcc gtc tgc tac ggt ctc Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu 225                   230                   235                   240	720
tac cgc tac gct gtc caa gga gtt gcc tcg atg gtc tgc ttc tac Tyr Arg Tyr Ala Ala Val Gln Gly Val Ala Ser Met Val Cys Phe Tyr 245                   250                   255	768
gga gtt cct ctt ctg att gtc aac ggg ttc tta gtt ttg atc act tac Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr 260                   265                   270	816
ttg cag cac acg cat cct tcc ctg cct cac tat gac tcg tct gag tgg Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp 275                   280                   285	864
gat tgg ttg agg gga gct ttg gcc acc gtt gac aga gac tac gga atc Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile 290                   295                   300	912
ttg aac aag gtc ttc cac aat atc acg gac acg cac gtg gcg cat cac Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His 305                   310                   315                   320	960
ctg ttc tcg acc atg ccg cat tat cat gcg atg gaa gct acg aag gcg Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala 325                   330                   335	1008
ata aag ccg ata ctg gga gag tat tat cag ttc gat ggg acg ccg gtg Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val 340                   345                   350	1056
gtt aag gcg atg tgg agg gag gcg aag gag tgt atc tat gtg gaa ccg Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro 355                   360                   365	1104
gac agg caa ggt gag aag aaa ggt gtg ttc tgg tac aac aat aag tta Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu 370                   375                   380	1152
tga	1155

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<213> Brassica napus

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Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser  
35 40 45  
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser  
50 55 60  
Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro  
65 70 75 80  
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val  
85 90 95  
Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe  
100 105 110  
Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser  
115 120 125  
Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His  
130 135 140  
His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys  
145 150 155 160  
Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu  
165 170 175  
Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu  
180 185 190  
Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Ala  
195 200 205  
Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu  
210 215 220  
Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu  
225 230 235 240  
Tyr Arg Tyr Ala Ala Val Gln Gly Val Ala Ser Met Val Cys Phe Tyr  
245 250 255  
Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr  
260 265 270  
Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp  
275 280 285  
Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile  
290 295 300  
Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His  
305 310 315 320  
Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala  
325 330 335  
Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val  
340 345 350  
Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro  
355 360 365  
Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu

370	375	380															
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Met	Gly	Ala	Gly	Gly	Arg	Met	Gln	Val	Ser	Pro	Pro	Ser	Lys	Lys	Ser		
1	5	10				15											
gaa	acc	gac	aac	atc	aag	cgc	gta	ccc	tgc	gag	aca	ccg	ccc	ttc	act		96
Glu	Thr	Asp	Asn	Ile	Lys	Arg	Val	Pro	Cys	Glu	Thr	Pro	Pro	Phe	Thr		
20	25									30							
gtc	gga	gaa	ctc	aag	aaa	gca	atc	cca	ccg	cac	tgt	ttc	aaa	cgc	tcg		144
Val	Gly																
35	40										45						
atc	cct	cgc	tct	ttc	tcc	tac	ctc	atc	tgg	gac	atc	atc	ata	gcc	tcc		192
Ile	Pro	Arg	Ser	Phe	Ser	Tyr	Leu	Ile	Trp	Asp	Ile	Ile	Ile	Ala	Ser		
50	55									60							
tgc	ttc	tac	tac	gtc	gcc	acc	act	tac	ttc	cct	ctc	ctc	cct	cac	cct		240
Cys	Phe	Tyr	Tyr	Val	Ala	Thr	Thr	Tyr	Phe	Pro	Leu	Leu	Pro	His	Pro		
65	70									75			80				
ctc	tcc	tac	ttc	gcc	tgg	cct	ctc	tac	tgg	gcc	tgc	cag	ggc	tgc	gtc		288
Leu	Ser	Tyr	Phe	Ala	Trp	Pro	Leu	Tyr	Trp	Ala	Cys	Gln	Gly	Cys	Val		
85	90									95							
cta	acc	ggc	gtc	tgg	gtc	ata	gcc	cac	aag	tgc	ggc	cac	cac	gcc	ttc		336
Leu	Thr	Gly	Val	Trp	Val	Ile	Ala	His	Lys	Cys	Gly	His	His	Ala	Phe		
100										105			110				
agc	gac	tac	cag	tgg	ctg	gac	acc	gtc	ggc	ctc	atc	ttc	cac	tcc		384	
Ser	Asp	Tyr	Gln	Trp	Leu	Asp	Asp	Thr	Val	Gly	Leu	Ile	Phe	His	Ser		
115										120			125				
ttc	ctc	ctc	gtc	cct	tac	ttc	tcc	tgg	aag	tac	agt	cat	cga	cgc	cac		432
Phe	Leu	Leu	Val	Pro	Tyr	Phe	Ser	Trp	Lys	Tyr	Ser	His	Arg	Arg	His		
130										135			140				
cat	tcc	aac	act	ggc	tcc	ctc	gag	aga	gac	gaa	gtg	ttt	gtc	ccc	aag		480
His	Ser	Asn	Thr	Gly	Ser	Leu	Glu	Arg	Asp	Glu	Val	Phe	Val	Pro	Lys		
145										150			155			160	

aag aag tca gac atc aag tgg tac ggc aag tac ctc aac aac cct ttg Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu 165 170 175	528
gga cgc acc gtg atg tta acg gtt cag ttc act ctc ggc tgg cct ttg Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu 180 185 190	576
tac tta gcc ttc aac gtc tcg ggg aga cct tac gac ggc ggc ttc gct Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Ala 195 200 205	624
tgc cat ttc cac ccc aac gct ccc atc tac aac gac cgt gag cgt ctc Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu 210 215 220	672
cag ata tac atc tcc gac gct ggc atc ctc gcc gtc tac ggt ctc Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu 225 230 235 240	720
tac cgc tac gct gtc caa gga gtt gcc tcg atg gtc tgc ttc tac Tyr Arg Tyr Ala Ala Val Gln Gly Val Ala Ser Met Val Cys Phe Tyr 245 250 255	768
gga gtt cct ctt ctg att gtc aac ggg ttc tta gtt ttg atc act tac Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr 260 265 270	816
ttg cag cac acg cat cct tcc ctg cct cac tat gac tcg tct gag tgg Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp 275 280 285	864
gat tgg ttg agg gga gct ttg gcc acc gtt gac aga gac tac gga atc Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile 290 295 300	912
ttg aac aag gtc ttc cac aat atc acg gac acg cac gtg gcg cat cac Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His 305 310 315 320	960
ctg ttc tcg acc atg ccg cat tat cat gcg atg gaa gct acg aag gcg Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala 325 330 335	1008
ata aag ccg ata ctg gga gag tat tat cag ttc gat ggg acg ccg gtg Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val 340 345 350	1056
gtt aag gcg atg tgg agg gag gcg aag gag tgt atc tat gtg gaa ccg Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro 355 360 365	1104

gac agg caa ggt gag aag aaa ggt gtg ttc tgg tac aac aat aag tta		1152	
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370	375	380	
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Glu Thr Asp Asn Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr			
20	25	30	
Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser			
35	40	45	
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ala Ser			
50	55	60	
Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro			
65	70	75	80
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val			
85	90	95	
Leu Thr Gly Val Trp Val Ile Ala His Lys Cys Gly His His Ala Phe			
100	105	110	
Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser			
115	120	125	
Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His			
130	135	140	
His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys			
145	150	155	160
Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu			
165	170	175	
Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu			
180	185	190	
Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Ala			
195	200	205	
Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu			
210	215	220	
Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu			
225	230	235	240
Tyr Arg Tyr Ala Ala Val Gln Gly Val Ala Ser Met Val Cys Phe Tyr			
245	250	255	
Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr			
260	265	270	
Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp			
275	280	285	
Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile			
290	295	300	
Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His			
305	310	315	320
Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala			

325	330	335
Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val		
340	345	350
Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro		
355	360	365
Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu		
370	375	380

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<212> DNA

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<220>

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1	5	10	15

gaa acc gac acc atc aag cgc gta ccc tgc gag aca ccg ccc ttc act	96		
Glu Thr Asp Thr Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr			
20	25	30	

gtc gga gaa ctc aag aaa gca atc cca ccg cac tgt ttc aaa cgc tcg	144		
Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser			
35	40	45	

atc cct cgc tct ttc tcc tac ctc atc tgg gac atc atc ata gcc tcc	192		
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser			
50	55	60	

tgc ttc tac tac gtc gcc acc act tac ttc cct ctc ctc cct cac cct	240		
Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro			
65	70	75	80

ctc tcc tac ttc gcc tgg cct ctc tac tgg gcc tgc caa ggg tgc gtc	288		
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val			
85	90	95	

cta acc ggc gtc tgg gtc ata gcc cac gag tgc ggc cac cac gcc ttc	336		
Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe			
100	105	110	

agc gac tac cag tgg ctt gac gac acc gtc ggt ctc atc ttc cac tcc	384		
Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser			
115	120	125	

ttc ctc ctc gtc cct tac ttc tcc tgg aag tac agt cat cga cgc cac	432		
Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His			
130	135	140	

cat tcc aac act ggc tcc ctc gag aga gac gaa gtg ttt gtc ccc aag		480
His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys		
145	150	155
		160
aag aag tca gac atc aag tgg tac ggc aag tac ctc aac aac cct ttg		528
Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu		
165	170	175
gga cgc acc gtg atg tta acg gtt cag ttc act ctc ggc tgg ccg ttg		576
Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu		
180	185	190
tac tta gcc ttc aac gtc tcg gga aga cct tac gac ggc ggc ttc gct		624
Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Phe Ala		
195	200	205
tgc cat ttc cac ccc aac gct ccc atc tac aac gac cgc gag cgt ctc		672
Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu		
210	215	220
cag ata tac atc tcc gac gct ggc atc ctc gcc gtc tgc tac ggt ctc		720
Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu		
225	230	235
		240
ttc cgt tac gcc gcc cgc cag gga gtg gcc tcg atg gtc tgc ttc tac		768
Phe Arg Tyr Ala Ala Gln Gly Val Ala Ser Met Val Cys Phe Tyr		
245	250	255
gga gtc ccg ctt ctg att gtc aat ggt ttc ctc gtg ttg atc act tac		816
Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr		
260	265	270
ttg cag cac acg cat cct tcc ctg cct cac tac gat tcg tcc gag tgg		864
Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp		
275	280	285
gat tgg ttg agg gga gct ttg gct acc gtt gac aga gac tac gga atc		912
Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile		
290	295	300
ttg aac aag gtc ttc cac aat att acc gac acg cac gtg gcg cat cat		960
Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His		
305	310	315
		320
ctg ttc tcc acg atg ccg cat tat cac gcg atg gaa gct acc aag gcg		1008
Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala		
325	330	335
ata aag ccg ata ctg gga gag tat tat cag ttc gat ggg acg ccg gtg		1056
Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val		
340	345	350

gtt aag gcg atg tgg agg gag gcg aag gag tgt atc tat gtg gaa ccg	1104
Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro	
355	360
	365
gac agg caa ggt gag aag aaa ggt gtg ttc tgg tac aac aat aag tta	1152
Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu	
370	375
	380
tga	1155
<210> 14	
<211> 384	
<212> PRT	
<213> Brassica napus	
<400> 14	
Met Gly Ala Gly Gly Arg Met Gln Val Ser Pro Pro Ser Lys Lys Ser	
1	5
	10
	15
Glu Thr Asp Thr Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr	
20	25
	30
Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser	
35	40
	45
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser	
50	55
	60
Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro	
65	70
	75
	80
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val	
85	90
	95
Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe	
100	105
	110
Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser	
115	120
	125
Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His	
130	135
	140
His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys	
145	150
	155
	160
Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu	
165	170
	175
Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu	
180	185
	190
Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Ala	
195	200
	205
Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu	
210	215
	220
Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu	
225	230
	235
	240
Phe Arg Tyr Ala Ala Ala Gln Gly Val Ala Ser Met Val Cys Phe Tyr	
245	250
	255
Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr	
260	265
	270
Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp	
275	280
	285
Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile	

290	295	300
Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His		
305	310	315
Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala		
325	330	335
Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val		
340	345	350
Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro		
355	360	365
Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu		
370	375	380

&lt;210&gt; 15

&lt;211&gt; 1155

&lt;212&gt; DNA

&lt;213&gt; Brassica napus

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1) ... (1152)

&lt;400&gt; 15

atg ggt gca ggt gga aga atg caa gtg tct cct ccc tcc aag aag tct	48		
Met Gly Ala Gly Gly Arg Met Gln Val Ser Pro Pro Ser Lys Lys Ser			
1	5	10	15

gaa acc gac acc atc aag cgc gta ccc tgc gag aca ccg ccc ttc act	96		
Glu Thr Asp Thr Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr			
20	25	30	

gtc gga gaa ctc aag aaa gca atc cca ccg cac tgt ttc aaa cgc tcg	144		
Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser			
35	40	45	

atc cct cgc tct ttc tcc tac ctc atc tgg gac atc atc ata gcc tcc	192		
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser			
50	55	60	

tgc ttc tac tac gtc gcc acc act tac ttc cct ctc ctc cct cac cct	240		
Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro			
65	70	75	80

ctc tcc tac ttc gcc tgg cct ctc tac tgg gcc tgc caa ggg tgc gtc	288		
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val			
85	90	95	

cta acc ggc gtc tgg gtc ata gcc cac gag tgc ggc cac cac gcc ttc	336		
Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe			
100	105	110	

agc gac tac cag tgg ctt gac gac acc gtc ggt ctc atc ttc cac tcc	384		
Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser			
115	120	125	

ttc ctc gtc cct tac ttc tcc tgg aag tac agt cat cga cgc cac		432
Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His		
130	135	140
cat tcc aac act ggc tcc ctc gag aga gac gaa gtg ttt gtc ccc aag		480
His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys		
145	150	155
160		
aag aag tca gac atc aag tgg tac ggc aag tac cac aac aac cct ttg		528
Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr His Asn Asn Pro Leu		
165	170	175
gga cgc acc gtg atg tta acg gtt cag ttc act ctc ggc tgg ccg ttg		576
Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu		
180	185	190
tac tta gcc ttc aac gtc tcg gga aga cct tac gac ggc ggc ttc gct		624
Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Ala		
195	200	205
tgc cat ttc cac ccc aac gct ccc atc tac aac gac cgc gag cgt ctc		672
Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu		
210	215	220
cag ata tac atc tcc gac gct ggc atc ctc gcc gtc tgc tac ggt ctc		720
Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu		
225	230	235
240		
ttc cgt tac gcc gcc gcg cag gga gtg gcc tcg atg gtc tgc ttc tac		768
Phe Arg Tyr Ala Ala Gln Gly Val Ala Ser Met Val Cys Phe Tyr		
245	250	255
gga gtc ccg ctt ctg att gtc aat ggt ttc ctc gtg ttg atc act tac		816
Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr		
260	265	270
ttg cag cac acg cat cct tcc ctg cct cac tac gat tcg tcc gag tgg		864
Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp		
275	280	285
gat tgg ttg agg gga gct ttg gct acc gtt gac aga gac tac gga atc		912
Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Gly Ile		
290	295	300
ttg aac aag gtc ttc cac aat att acc gac acg cac gtg gcg cat cat		960
Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His		
305	310	315
320		
ctg ttc tcc acg atg ccg cat tat cac gcg atg gaa gct acc aag gcg		1008
Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala		
325	330	335

ata aag ccg ata ctg gga gag tat tat cag ttc gat ggg acg ccg gtg Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val 340                   345                   350	1056
gtt aag gcg atg tgg agg gag gcg aag gag tgt atc tat gtg gaa ccg Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro 355                   360                   365	1104
gac agg caa ggt gag aag aaa ggt gtg ttc tgg tac aac aat aag tta Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu 370                   375                   380	1152
tga	1155
<210> 16	
<211> 384	
<212> PRT	
<213> Brassica napus	
 <400> 16	
Met Gly Ala Gly Gly Arg Met Gln Val Ser Pro Pro Ser Lys Lys Ser 1                 5                   10                   15	
Glu Thr Asp Thr Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr 20               25                   30	
Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser 35               40                   45	
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser 50               55                   60	
Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro 65               70                   75                   80	
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val 85               90                   95	
Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe 100              105                  110	
Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser 115              120                  125	
Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His 130              135                  140	
His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys 145              150                  155                  160	
Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr His Asn Asn Pro Leu 165              170                  175	
Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu 180              185                  190	
Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Ala 195              200                  205	
Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu 210              215                  220	
Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu 225              230                  235                  240	
Phe Arg Tyr Ala Ala Ala Gln Gly Val Ala Ser Met Val Cys Phe Tyr 245              250                  255	
Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr	

260	265	270	
Leu Gln His Thr His Pro Ser	Leu Pro His Tyr Asp Ser	Ser Glu Trp	
275	280	285	
Asp Trp Leu Arg Gly Ala	Leu Ala Thr Val Asp	Arg Asp Tyr Gly Ile	
290	295	300	
Leu Asn Lys Val Phe His	Asn Ile Thr Asp Thr	His Val Ala His His	
305	310	315	320
Leu Phe Ser Thr Met Pro His	Tyr His Ala Met Glu Ala	Thr Lys Ala	
325	330	335	
Ile Lys Pro Ile Leu Gly	Glu Tyr Tyr Gln Phe Asp	Gly Thr Pro Val	
340	345	350	
Val Lys Ala Met Trp Arg	Glu Ala Lys Glu Cys	Ile Tyr Val Glu Pro	
355	360	365	
Asp Arg Gln Gly Glu Lys	Lys Gly Val Phe Trp	Tyr Asn Asn Lys Leu	
370	375	380	

&lt;210&gt; 17

&lt;211&gt; 1155

&lt;212&gt; DNA

&lt;213&gt; Brassica napus

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1) ... (1152)

&lt;400&gt; 17

atg ggt gca ggt gga aga atg caa gtg tct cct ccc tcc aag aag tct	48
Met Gly Ala Gly Gly Arg Met Gln Val Ser Pro Pro Ser Lys Lys Ser	
1                   5                   10                   15	

gaa acc gac acc atc aag cgc gta ccc tgc gag aca ccg ccc ttc act	96
Glu Thr Asp Thr Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr	
20                   25                   30	

gtc gga gaa ctc aag aaa gca atc cca ccg cac tgt ttc aaa cgc tcg	144
Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser	
35                   40                   45	

atc cct cgc tct ttc tcc tac ctc atc tgg gac atc atc ata gcc tcc	192
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ala Ser	
50                   55                   60	

tgc ttc tac tac gtc gcc acc act tac ttc cct ctc ctc cct cac cct	240
Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro	
65                   70                   75                   80	

ctc tcc tac ttc gcc tgg cct ctc tac tgg gcc tgc caa ggg tgc gtc	288
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val	
85                   90                   95	

cta acc ggc gtc tgg gtc ata gcc cac gag tgc ggc cac cac gcc ttc	336
Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe	
100                  105                  110	

agc gac tac cag tgg ctt gac gac acc gtc ggt ctc atc ttc cac tcc Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser 115 120 125	384
ttc ctc ctc gtc cct tac ttc tcc tgg aag tac agt cat cga cgc cac Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His 130 135 140	432
cat tcc aac act ggc tcc ctc gag aga gac gaa gtg ttt gtc ccc aag His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys 145 150 155 160	480
aag aag tca gac atc aag tgg tac ggc aag tac ctc aac aac cct ttg Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu 165 170 175	528
gga cgc acc gtg atg tta acg gtt cag ttc act ctc ggc tgg ccg ttg Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu 180 185 190	576
tac tta gcc ttc aac gtc tcg gga aga cct tac gac ggc ggc ttc gct Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Phe Ala 195 200 205	624
tgc cat ttc cac ccc aac gct ccc atc tac aac gac cgc gag cgt ctc Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu 210 215 220	672
cag ata tac atc tcc gac gct ggc atc ctc gcc gtc tgc tac ggt ctc Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu 225 230 235 240	720
ttc cgt tac gcc gcc gcg cag gga gtg gcc tcg atg gtc tgc ttc tac Phe Arg Tyr Ala Ala Ala Gln Gly Val Ala Ser Met Val Cys Phe Tyr 245 250 255	768
gga gtc ccg ctt ctg att gtc aat ggt ttc ctc gtg ttg atc act tac Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr 260 265 270	816
ttg cag cac acg cat cct tcc ctg cct cac tac gat tcg tcc gag tgg Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp 275 280 285	864
gat tgg ttg agg gga gct ttg gct acc gtt gac aga gac tac gaa atc Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Glu Ile 290 295 300	912
ttg aac aag gtc ttc cac aat att acc gac acg cac gtg gcg cat cat Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His 305 310 315 320	960

ctg ttc tcc acg atg ccg cat tat cac gcg atg gaa gct acc aag gcg		1008	
Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala			
325	330	335	
ata aag ccg ata ctg gga gag tat tat cag ttc gat ggg acg ccg gtg		1056	
Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val			
340	345	350	
gtt aag gcg atg tgg agg gag gcg aag gag tgt atc tat gtg gaa ccg		1104	
Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro			
355	360	365	
gac agg caa ggt gag aag aaa ggt gtg ttc tgg tac aac aat aag tta		1152	
Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu			
370	375	380	
tga		1155	
<210> 18			
<211> 384			
<212> PRT			
<213> Brassica napus			
 <400> 18			
Met Gly Ala Gly Gly Arg Met Gln Val Ser Pro Pro Ser Lys Lys Ser			
1	5	10	15
Glu Thr Asp Thr Ile Lys Arg Val Pro Cys Glu Thr Pro Pro Phe Thr			
20	25	30	
Val Gly Glu Leu Lys Lys Ala Ile Pro Pro His Cys Phe Lys Arg Ser			
35	40	45	
Ile Pro Arg Ser Phe Ser Tyr Leu Ile Trp Asp Ile Ile Ile Ala Ser			
50	55	60	
Cys Phe Tyr Tyr Val Ala Thr Thr Tyr Phe Pro Leu Leu Pro His Pro			
65	70	75	80
Leu Ser Tyr Phe Ala Trp Pro Leu Tyr Trp Ala Cys Gln Gly Cys Val			
85	90	95	
Leu Thr Gly Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe			
100	105	110	
Ser Asp Tyr Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser			
115	120	125	
Phe Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His			
130	135	140	
His Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val Pro Lys			
145	150	155	160
Lys Lys Ser Asp Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu			
165	170	175	
Gly Arg Thr Val Met Leu Thr Val Gln Phe Thr Leu Gly Trp Pro Leu			
180	185	190	
Tyr Leu Ala Phe Asn Val Ser Gly Arg Pro Tyr Asp Gly Gly Phe Ala			
195	200	205	
Cys His Phe His Pro Asn Ala Pro Ile Tyr Asn Asp Arg Glu Arg Leu			
210	215	220	
Gln Ile Tyr Ile Ser Asp Ala Gly Ile Leu Ala Val Cys Tyr Gly Leu			

225	230	235	240
Phe Arg Tyr Ala Ala Ala Gln Gly Val Ala Ser Met Val Cys Phe Tyr			
245	250	255	
Gly Val Pro Leu Leu Ile Val Asn Gly Phe Leu Val Leu Ile Thr Tyr			
260	265	270	
Leu Gln His Thr His Pro Ser Leu Pro His Tyr Asp Ser Ser Glu Trp			
275	280	285	
Asp Trp Leu Arg Gly Ala Leu Ala Thr Val Asp Arg Asp Tyr Glu Ile			
290	295	300	
Leu Asn Lys Val Phe His Asn Ile Thr Asp Thr His Val Ala His His			
305	310	315	320
Leu Phe Ser Thr Met Pro His Tyr His Ala Met Glu Ala Thr Lys Ala			
325	330	335	
Ile Lys Pro Ile Leu Gly Glu Tyr Tyr Gln Phe Asp Gly Thr Pro Val			
340	345	350	
Val Lys Ala Met Trp Arg Glu Ala Lys Glu Cys Ile Tyr Val Glu Pro			
355	360	365	
Asp Arg Gln Gly Glu Lys Lys Gly Val Phe Trp Tyr Asn Asn Lys Leu			
370	375	380	

&lt;210&gt; 19

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; primer

&lt;400&gt; 19

ggatatgatg atgggtgaaag a

21

&lt;210&gt; 20

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; primer

&lt;400&gt; 20

tctttcacca tcacatatac c

21

&lt;210&gt; 21

&lt;211&gt; 21

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; primer

&lt;400&gt; 21

gttatgaagc aaagaagaaa c

21

&lt;210&gt; 22

<211> 26		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 22		
gtttcttctt tgctttgctt cataaac		26
<210> 23		
<211> 32		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 23		
caucaucauc aucttcttcg tagggttcat cg		32
<210> 24		
<211> 33		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 24		
cuacuacuac uatcatagaa gagaaagggtt cag		33
<210> 25		
<211> 32		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 25		
caucaucauc aucatgggtg cacgtggaag aa		32
<210> 26		
<211> 33		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> primer		
<400> 26		
cuacuacuac uatcttcac catcatcata tcc		33

<210> 27  
<211> 30  
<212> PRT  
<213> Arabidopsis thaliana

<400> 27  
Ile Trp Val Ile Ala His Glu Cys Gly His His Ala Phe Ser Asp Tyr  
1 5 10 15  
Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser Phe  
20 25 30

<210> 28  
<211> 30  
<212> PRT  
<213> Glycine max

<400> 28  
Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe Ser Lys Tyr  
1 5 10 15  
Gln Trp Val Asp Asp Val Val Gly Leu Thr Leu His Ser Thr  
20 25 30

<210> 29  
<211> 30  
<212> PRT  
<213> Zea mays

<400> 29  
Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe Ser Asp Tyr  
1 5 10 15  
Ser Leu Leu Asp Asp Val Val Gly Leu Val Leu His Ser Ser  
20 25 30

<210> 30  
<211> 29  
<212> PRT  
<213> Ricinus communis

<400> 30  
Trp Val Met Ala His Asp Cys Gly His His Ala Phe Ser Asp Tyr Gln  
1 5 10 15  
Leu Leu Asp Asp Val Val Gly Leu Ile Leu His Ser Cys  
20 25

<210> 31  
<211> 29  
<212> PRT  
<213> Arabidopsis thaliana

<400> 31  
Leu Leu Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His His  
1 5 10 15  
Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val

20

25

<210> 32  
<211> 29  
<212> PRT  
<213> Glycine max

<400> 32  
Leu Leu Val Pro Tyr Phe Ser Trp Lys Ile Ser His Arg Arg His His  
1 5 10 15  
Ser Asn Thr Gly Ser Leu Asp Arg Asp Glu Val Phe Val  
20 25

<210> 33  
<211> 29  
<212> PRT  
<213> Zea mays

<400> 33  
Leu Met Val Pro Tyr Phe Ser Trp Lys Tyr Ser His Arg Arg His His  
1 5 10 15  
Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val  
20 25

<210> 34  
<211> 29  
<212> PRT  
<213> Ricinus communis

<400> 34  
Leu Leu Val Pro Tyr Phe Ser Trp Lys His Ser His Arg Arg His His  
1 5 10 15  
Ser Asn Thr Gly Ser Leu Glu Arg Asp Glu Val Phe Val  
20 25

<210> 35  
<211> 36  
<212> PRT  
<213> Arabidopsis thaliana

<400> 35  
Asp Arg Asp Tyr Gly Ile Leu Asn Lys Val Phe His Asn Ile Thr Asp  
1 5 10 15  
Thr His Val Ala His His Leu Phe Ser Thr Met Pro His Tyr Asn Ala  
20 25 30  
Met Glu Ala Thr  
35

<210> 36  
<211> 36  
<212> PRT  
<213> Glycine max

<400> 36  
 Asp Arg Asp Tyr Gly Ile Leu Asn Lys Val Phe His His Ile Thr Asp  
 1 5 10 15  
 Thr His Val Ala His His Leu Phe Ser Thr Met Pro His Tyr His Ala  
 20 25 30

Met Glu Ala Thr  
 35

<210> 37

<211> 36  
 <212> PRT  
 <213> Zea mays

<400> 37

Asp Arg Asp Tyr Gly Ile Leu Asn Arg Val Phe His Asn Ile Thr Asp  
 1 5 10 15  
 Thr His Val Ala His His Leu Phe Ser Thr Met Pro His Tyr His Ala  
 20 25 30

Met Glu Ala Thr  
 35

<210> 38

<211> 27  
 <212> PRT  
 <213> Ricinus communis

<400> 38

Asp Arg Asp Tyr Gly Ile Leu Asn Lys Val Phe His Asn Ile Thr Asp  
 1 5 10 15  
 Thr Gln Val Ala His His Leu Phe Thr Met Pro  
 20 25

<210> 39

<211> 16  
 <212> PRT  
 <213> Arabidopsis thaliana

<400> 39

Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu Gly Arg Ile Met  
 1 5 10 15

<210> 40

<211> 16

<212> PRT

<213> Glycine max

<400> 40

Val Ala Trp Phe Ser Leu Tyr Leu Asn Asn Pro Leu Gly Arg Ala Val  
 1 5 10 15

<210> 41

<211> 16

<212> PRT

<213> Zea mays

<400> 41

Pro	Trp	Tyr	Thr	Pro	Tyr	Val	Tyr	Asn	Asn	Pro	Val	Gly	Arg	Val	Val
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<210> 42

<211> 16

<212> PRT

<213> Ricinus communis

<400> 42

Ile	Arg	Trp	Tyr	Ser	Lys	Tyr	Leu	Asn	Asn	Pro	Pro	Gly	Arg	Ile	Met
1				5						10				15	

<210> 43

<211> 22

<212> PRT

<213> Arabidopsis thaliana

<400> 43

Trp	Ala	Leu	Phe	Val	Leu	Gly	His	Asp	Cys	Gly	His	Gly	Ser	Phe	Ser
1				5					10					15	

Asn Asp Pro Lys Leu Asn

20

<210> 44

<211> 22

<212> PRT

<213> Brassica napus

<400> 44

Trp	Ala	Leu	Phe	Val	Leu	Gly	His	Asp	Cys	Gly	His	Gly	Ser	Phe	Ser
1				5					10					15	

Asn Asp Pro Arg Leu Asn

20

<210> 45

<211> 22

<212> PRT

<213> Glycine max

<400> 45

Trp	Ala	Leu	Phe	Val	Leu	Gly	His	Asp	Cys	Gly	His	Gly	Ser	Phe	Ser
1				5					10					15	

Asn Asn Ser Lys Leu Asn

20

<210> 46

<211> 22

<212> PRT

<213> Arabidopsis thaliana

&lt;400&gt; 46

Trp Ala Ile Phe Val Leu Gly His Asp Cys Gly His Gly Ser Phe Ser  
1 5 10 15  
Asp Ile Pro Leu Leu Asn  
20

&lt;210&gt; 47

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; exemplary motif

&lt;400&gt; 47

Asp Arg Asp Tyr Gly Ile Leu Asn Lys Val  
1 5 10

&lt;210&gt; 48

&lt;211&gt; 22

&lt;212&gt; PRT

&lt;213&gt; Glycine max

&lt;400&gt; 48

Trp Ala Leu Phe Val Leu Gly His Asp Cys Gly His Gly Ser Phe Ser  
1 5 10 15  
Asp Ser Pro Pro Leu Asn  
20

&lt;210&gt; 49

&lt;211&gt; 29

&lt;212&gt; PRT

&lt;213&gt; Arabidopsis thaliana

&lt;400&gt; 49

Ile Leu Val Pro Tyr His Gly Trp Arg Ile Ser His Arg Thr His His  
1 5 10 15  
Gln Asn His Gly His Val Glu Asn Asp Glu Ser Trp His  
20 25

&lt;210&gt; 50

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; exemplary motif

&lt;400&gt; 50

Asp Arg Asp Tyr Glu Ile Leu Asn Lys Val  
1 5 10

&lt;210&gt; 51

<211> 29  
<212> PRT  
<213> Glycine max

<400> 51  
Ile Leu Val Pro Tyr His Gly Trp Arg Ile Ser His Arg Thr His His  
1 5 10 15  
Gln His His Gly His Ala Glu Asn Asp Glu Ser Trp His  
20 25

<210> 52  
<211> 29  
<212> PRT  
<213> Arabidopsis thaliana

<400> 52  
Ile Leu Val Pro Tyr His Gly Trp Arg Ile Ser His Arg Thr His His  
1 5 10 15  
Gln Asn His Gly His Val Glu Asn Asp Glu Ser Trp Val  
20 25

<210> 53  
<211> 6  
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<220>  
<223> exemplary motif

<400> 53  
Lys Tyr His Asn Asn Pro  
1 5

<210> 54  
<211> 29  
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1 5 10 15  
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<210> 55  
<211> 6  
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<400> 55  
Gly His Asp Cys Ala His  
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<210> 56

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<211> 6
<212> PRT
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<400> 56
Gly His Lys Cys Gly His
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<210> 57
<211> 6
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<220>
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<223> amino acid residues 94-99 of Canola-Fad3

<400> 57
Gly His Asp Cys Gly His
 1           5

<210> 58
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary motif

<400> 58
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 1           5

<210> 59
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<212> DNA
<213> Phaseolus vulgaris

<400> 59
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<210> 60
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<220>
<223> exemplary motif

<400> 60
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<210> 61

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<211> 5  
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<220>  
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<400> 61  
His Arg Arg His His  
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<210> 62  
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<220>  
<223> exemplary motif

<400> 62  
His Arg Thr His His  
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<210> 63  
<211> 5  
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<220>  
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<400> 63  
His Val Ala His His  
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<210> 64  
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<220>  
<223> exemplary motif

<400> 64  
Lys Tyr Leu Asn Asn Pro  
1 5

<210> 65  
<211> 29  
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<213> Brassica napus

<400> 65  
Val Trp Val Ile Ala His Glu Cys Gly His His Ala Phe Ser Asp Tyr

1 5 10 15  
Gln Trp Leu Asp Asp Thr Val Gly Leu Ile Phe His Ser  
20 25

<210> 66  
<211> 36  
<212> PRT  
<213> Brassica napus

<400> 66  
Asp Arg Asp Tyr Gly Ile Leu Asn Lys Val Phe His Asn Ile Thr Asp  
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Thr His Val Ala His His Leu Phe Ser Thr Met Pro His Tyr His Ala  
20 25 30  
Met Glu Ala Thr  
35

<210> 67  
<211> 16  
<212> PRT  
<213> Brassica napus

<400> 67  
Ile Lys Trp Tyr Gly Lys Tyr Leu Asn Asn Pro Leu Gly Arg Thr Val  
1 5 10 15

<210> 68  
<211> 6  
<212> PRT  
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<220>  
<223> exemplary motif

<400> 68  
Ala His Lys Cys Gly His  
1 5

<210> 69  
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<220>  
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<400> 69  
Ala His Glu Cys Gly His  
1 5

<210> 70  
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<220>  
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<400> 70  
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1 5